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THE APPLICATION OF A DEPRECIATION CHARGE IN RAILWAY ACCOUNTING

The Interstate Commerce Commission have already introduced into Railway Accounts, beginning with July 1, 1907, the principle of making a fixed monthly charge for depreciation of equipment (locomotives, passenger and freight cars, work-train equipment and tools) and have furthermore suggested that the principle should be applied to track, bridges, and buildings, and minor structures. Under these circumstances, it seems desirable to set forth somewhat fully the methods of dealing with this general subject which have been developed in this country and in Great Britain during the last seventy-five years; and if possible, arrive at a fair conclusion as to the best course to adopt. Furthermore, while in some parts of the country it may be to the interest of railroad corporations to swell their operating expenses as much as possible; or in other parts of the country it may be to their interest to make the operating expenses appear as low as possible, this question of depreciation should not be considered from the standpoint of selfish or local interests, but rather from the standpoint of the broad principles involved, which apply very generally to many commercial undertakings.

Nothing in this paper is intended as in any sense a reflection or attack upon the rulings of the Interstate Commerce Commission; but is an endeavor to co-ordinate the facts in relation to the subject and point out wherein these rules for depreciation are both unjust and unwise in their method of application.

I. WHAT IS MEANT BY DEPRECIATION?

Depreciation is a comparatively new phrase in railroad accounting, and, judging from the articles which have appeared on the subject, there seems to be some confusion as to just what is meant. Does depreciation mean the loss of value in a car or an engine due to wear and tear? If so, this sort of depreciation is amply covered by proper maintenance; in other words, it is usual when an engine or car goes into the repair shop, whether damaged in an accident or by legitimate wear, to replace its worn-out or damaged parts and restore it to its original condition. Repairs are classed as "running repairs," by which are meant the repairs necessary to keep equipment in safe running condition; and "general repairs," by which are meant the repairs needed to restore the equipment to its original condition. There are plenty of cases on roads both in this country and in Europe, where locomotives and cars are so well maintained that there is no appreciable depreciation. Indeed, locomotives are running on English roads which are, though obsolete in many respects, as good as new, though fifty years old; and there are many cases upon roads in this country where engines and cars twenty-five years old have been so well maintained that they are as good as when originally built.

According to their character and efficiency, it is customary to give locomotives a general overhauling, say once every two or three years. At this time perhaps one-fourth of the original cost of the locomotive is spent in general overhauling. General repairs to passenger equipment in the same way, are made at regular intervals. With freight cars, the repairs are usually incident to damage done by use, or what is sometimes called "unfair usage," or the result of accidents.

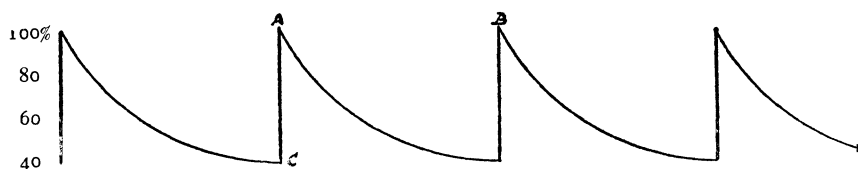
In respect to buildings and other structures, their ultimate life depends entirely upon the character of maintenance and care. Wooden buildings well roofed and painted, repaired when necessary, will last indefinitely, and of course, structures of masonry or iron are even more permanent. Buildings and structures on railroads are rarely discarded except because they have outlived

their usefulness, and something of a more efficient type is needed in their place.

From the foregoing it will be seen that if by depreciation is meant the loss due to wear and tear, it may be illustrated as to each piece of equipment or each building or structure, by a mathematical curve something like that indicated in the accompanying Diagram I. The distance from "A" to "B" represents the period

DIAGRAM I

Curve illustrating Condition of Equipment, Buildings, or Structures over a long period of time. Space along vertical lines represents value of equipment, etc. Space along horizontal lines represents time interval.



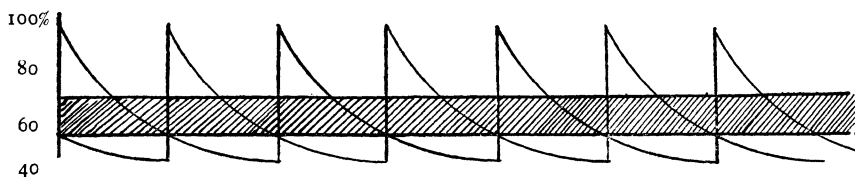
of time in which under normal conditions the deterioration takes place; in the case of locomotives, say three years; in the case of passenger cars, say two years; in the case of freight cars, a very variable quantity, averaging perhaps three years; in the case of buildings and structures, depending wholly on the character of the building and structure, climatic conditions, etc. The distance from "A" to "C" represents the diminution in value due to wear and tear down to the point where it becomes necessary to make extensive repairs. This is one view of what is meant by depreciation.

Another view of depreciation is that it represents the amount by which the average condition of the physical property has deteriorated below the original or new condition. It is assumed that each piece of physical property on the railroad, other than the real estate, is depreciating in value in the way represented by the curve already drawn, but that because the railroad is a composite of an immense number of units, the average condition of all the separate units combined is represented by a line at some point between the upper and lower nodes of this curve. Obviously, this will vary a little bit on the different roads according

to the personal equation of management, local conditions, etc., which in turn are affected by good or bad business conditions. A corporation differs from an individual only in degree. In good times, expenditures for maintenance are liberally made: in hard times all expenditures of this kind which can be safely postponed necessarily cease. If then by depreciation is meant the drop from the original cost down to the average-condition value of equipment, buildings or structures, it is evident that there is a line, or more accurately, a band or zone somewhere between 100 per cent. value and the 50 per cent. value, and this band, speaking very liberally, will be somewhere between 60 per cent. and 75 per cent. of the original cost. See Diagram II.

DIAGRAM II

The result of Composite Curves similar to those shown below is a Line or more strictly a Band or Zone representing *Average Condition*.



To put this in another way, it means that with every "going" concern, whether it be a railroad or a manufacturing corporation, representing in its physical property many separate units of equipment or structures, the average condition is somewhere between one-fourth and one-half worn out. If the worn-out condition may be fairly stated as one-half the original cost, then we may say that the average condition of such equipment and structures is somewhere between 60 per cent. and 75 per cent. of the original cost. It is obvious, however, that when the lower limit of this band which represents the average condition of the units is reached, depreciation does not continue farther, and that therefore if a regular fixed charge is to be made to cover this alleged loss of value (which, by the way, it is proposed shall be based wholly on the original cost with no reference to earning power) the charge should cease at that point as the limit of actual

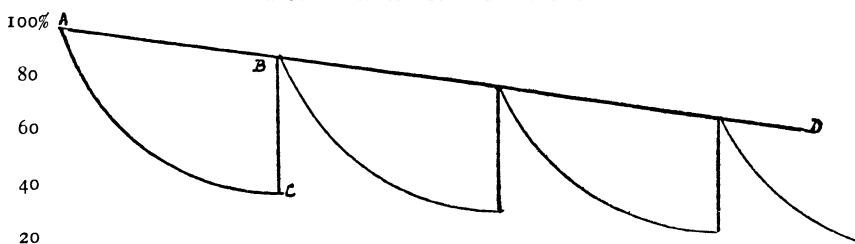
depreciation of the units considered as a whole has been reached. This phase of the question (the limit of depreciation) will be considered further in another paragraph.

Still a third view of depreciation is that it means the depreciation due to "obsolescence." It is argued that while each piece of equipment or every building or structure may be restored to its original condition, there is a diminution in value, due to obsolescence. Every manufacturer, as well as every corporation, fully appreciates this. In a country which is developing rapidly it is frequently necessary to discard perfectly good equipment, buildings, and structures, and to replace them with something more efficient. It is possible that conditions will warrant "writing off" the cost of such equipment or structures and charging to cost of operation the entire cost of renewal with more modern and more efficient tools or equipment. It may be argued that this is the kind of depreciation which it is the business of the railroad to provide for by monthly charge in its operation. The difficulty is to estimate the rate at which such depreciation takes place.

DIAGRAM III

Diagram showing Condition of Equipment, Buildings, and Structures as in Diagram I, but taking into account Depreciation due to Obsolescence.

RATE OF DEPRECIATION DUE TO OBsolescence



To illustrate it, we may represent such a depreciation as this by a mathematical curve for each piece of equipment, building and structure, as shown in Diagram III. The difference between the curve in Diagram III and that of Diagram I lies in the fact that Diagram III shows a depreciation due to obsolescence, whereas Diagram I does not. In III we make a line "A—D,"

which is at a slight angle to the horizontal. It represents the *rate of depreciation* due to obsolescence. It contemplates that every time a unit of equipment, a building or a structure, is restored to a condition "as good as new," it is not brought back to a value equal to that represented by its original cost, but to a value as much less than its original cost as the depreciation due to obsolescence may have brought it. To provide for this sort of depreciation it is obviously necessary to determine the rate of depreciation due to obsolescence. Who shall say? Shall we be guided in the future from the results in the past? Shall we say in respect to locomotives that because locomotives are now as high, as wide, and perhaps as long as they may be built, there can be no further developments in that direction? Or, shall we accept the arguments of those who believe in electric transportation, that the steam locomotive will soon be discarded and the electrically driven motor take its place? In one case, the rate of depreciation due to obsolescence will be small, while in the other case, it can be determined only by our surmise as to how soon the revolution from steam to electricity is going to take place.

The obsolescence of equipment and of structures has been cared for in the past on many railroads in a manner which has been perfectly fair to the stockholders and the public by replacing such equipment or structures with new, whenever financial conditions would permit it. Thus, in good years, cars or locomotives have been discarded (that is to say, either sold or torn down at a specified rate per month) and the cost of replacing them with modern cars or engines, less the salvage charge, has been quite generally charged to cost of operation. This method has taken care of this sort of depreciation without putting a fixed burden upon the property, because the number of cars, or of engines, or structures replaced, is within the control of the management. On some lines, cars and engines have been bought on the instalment plan and the entire cost, spread over a period of say ten years, has been paid out of income.

II. DEPRECIATION OF TRACK, BRIDGES, BUILDINGS, SHOPS AND SHOP TOOLS, ETC.

a) In this case, as in the case of equipment, there is depreciation due to wear and tear; also a depreciation due to obsolescence. The history of the country shows, however, that little by little, structures of a temporary nature, such for example as wooden bridges, are gradually being replaced by structures of a permanent or indestructible nature; and whenever a structure of a temporary nature can be replaced by a structure of a permanent nature at no greater cost, there is no added charge made to capital account.

b) In the case of the depreciation of track, bridges, buildings, etc., we find the same principle that is recognized by the Master Car Builders' Association in respect to cars; that is to say, the depreciation does not proceed beyond a certain point. In other words, the railroad as a complete plant is a composite structure, and if it is properly maintained (if the rails are renewed as they require renewal, ties renewed as they rot out, buildings replaced or repaired as they show signs of decay) depreciation does not proceed beyond a point which is say 50 per cent. of the original value. A simple example of this may be given by an illustration common in track maintenance: If the average life of the ties in track be ten years, the ties in an old railroad, properly maintained, will have an average age of something over five years. In the same way it can be shown that the average age of the rails, or the structures of a railroad where maintenance has been properly kept up, is about half the full life of the various items, and in a sense, the track, the buildings and structures, are, generally speaking, one-half worn out.

c) So far as depreciation due to obsolescence is concerned, experience has not shown any considerable actual loss from this source in the past. It is of course true that buildings must sometimes be torn down and replaced by buildings better suited for modern needs. Thus, roundhouses have been found too small, and bridges and other structures have had to be replaced, but the loss from this source has been relatively small as compared

with the case of equipment, and the salvage has been large. Furthermore, under generally accepted accounting methods, only the difference between the cost of the new building, or the new structure, and the cost of replacing "*in kind*" has been charged to capital account.

III. DOES THE PLANT OF A RAILROAD AS A WHOLE DEPRECIATE IN VALUE IF WELL MAINTAINED?

a) It is desirable before answering this question, that one should understand what is meant by "value." There are plenty of cases on record where railroads, as well as commercial undertakings have not proved to be worth what they cost. It is more often true that they have proved to be worth more than they cost; in other words, errors of judgment and even unwise expenditures have been overtaken by the advance and wonderful development of our country. In the discussion of this question of depreciation it has too often happened that "cost" and "value" have been used as synonymous terms. The principal investment of a railroad is in its permanent way and terminals. The value of the property once dedicated to railroad use is not its original cost, nor even the cost of adjacent or nearby property, but its value as represented in earning capacity. Of course, the maximum value of a piece of property belonging to the railroad would be the expenditure which would be necessary to replace it. The value of a piece of property in a continuous right of way of a railroad, say between Chicago and New York, would be well-nigh impossible to estimate, but it certainly could not be based on the value of farming lands or of lots and blocks adjacent.

b) Steam railroads do not have to provide for any depreciation as against the expiration of a franchise, which, of course, is a serious item with public-service corporations having limited franchises. Nor is there, in the case of steam railroads, a large share of the total investment in a central power plant, which is becoming obsolete. In most cases, the depreciation due to the diminished value of equipment, track, bridges, structures of all kinds, shops and shop tools already referred to, is limited, as has been explained, and is, furthermore, a good deal more than

counterbalanced by the appreciation due to the fact that the age of the railroad has given it an established business. This amounts to a good deal more in the case of a railroad than what is called "good will" in the case of a mercantile corporation. As a railroad is developed, industries, mines, and factories are established along its tracks, with switches and side-track facilities, towns grow up along it, and a certain amount of business becomes assured to it—business which it takes years and a large expenditure of money and energy to develop; all of which is charged into current operating expenses and should be considered as an offset to any depreciation of the property.

c) Besides the appreciation due to the above-mentioned causes, there is, of course, an actual physical enhancement of value due to the condition of the roadbed and embankments becoming better solidified, the water courses established, and the original structures gradually replaced with others of a more permanent character, even without any addition to capital account; thus, wooden trestles, bridges, and culverts have been filled with earth or replaced by steel or iron, stone, or concrete.¹

d) No account is taken and no estimate can be made of the enhanced value of the railroad property (right of way and terminals) due to the enhanced value of the land, even though the existence of the railroad may have contributed largely to the development of the country through which it runs. The railroad corporation suffers by reason of this enhanced value which it has so largely contributed to create if it is compelled to purchase any additional property as well as in the increased amount of the taxes it is called upon to pay each year as its contribution to the needs of the growing communities; but it has not been usual to make any allowance for this. Those who have had the greatest experience with railways generally believe that the enhancement

¹ An approximate estimate of the locomotive cinders produced annually in the United States is 31,000,000 cubic yards on the basis of the coal consumption by railroads in 1906. This is practically all used as ballast, to reinforce the roadbed, etc., and is worth on a conservative basis 20 cents per cubic yard, or \$6,200,000, which represents the increment in value due to the use of locomotive cinders, all of which is charged out as part of the expense of operation, and not credited to enhancement of the plant.

in value, or appreciation of the property in the direction already referred to, far more than balances the depreciation, especially when it is remembered that the total physical depreciation under proper maintenance rules is, without doubt, limited to about half the first cost of the property subject to depreciation.

IV. THE LIMITS OF DEPRECIATION

As has already been pointed out, and illustrated diagrammatically, there is a limit to depreciation in any composite structure properly maintained. This limit, as already shown, is probably between 60 per cent. and 75 per cent. of the cost of new. If, therefore, there is a limit to depreciation, it follows that on any railway property which is old enough to have passed the period of its first replacement and renewal, no further depreciation should be charged. In other words, the time when depreciation is rapid on a railroad is in the first five or ten years of its life; beyond that, with proper maintenance, depreciation ceases. This is in no sense an argument against the policy which conservative corporations have long followed of making many renewals and betterments out of earnings whenever earnings justify it, but such a policy is obviously one which is pursued in years of plenty to provide a margin of safety in times of stress.

The present capitalization of American railroads on a mileage basis, after deducting the stock and bonds of one corporation owned by another so as to avoid duplication of figures, is shown by the most recent investigation of the Interstate Commerce Commission to be only slightly more today than it was twenty or thirty years ago. This is evidence that railroads have charged many "betterments" and "improvements" either to operating expenses or to income account. It may properly be contended that this is proof that not only have the railroads made good whatever depreciation there has been, but they have more than made it good. On this point, it should be borne in mind that these charges for "replacements," for "betterments" and for "improvements," whether to operating expenses, or to income account, have not been made on any hard and fast rule, requiring a fixed monthly charge, but have been made on a flexible rule

within the discretion of the board of directors, who are actually, as well as theoretically, responsible to the public for the proper management of the properties; and this, of course, includes the maintenance of the integrity of the property.

The method more common in England has been to charge all "betterments" and "improvements" to capital account, issuing additional securities therefor; and it is contended that this method has been more fair to the property than the American method. The objection to it is that it has led to a gradual and steady increase in the capitalization per mile of the British railways, whereas the American method has operated in the reverse way.

V. THE NECESSITY OF FLEXIBILITY

In the operation of any property, or any business, there is a necessity for flexibility. Obviously, if all the charges of operation were absolutely fixed, as is interest on money borrowed, or taxes, there would of necessity have to be a greater margin of profit allowed than there now is. Practically, corporations, whether they be mercantile, manufacturing or railroad, are subject to very wide fluctuations in their receipts, and are frequently compelled to "cut the coat according to the cloth." In railway operation, this flexibility has been cared for in the past in the following manner:

In the months or the years when business has been heavy and profits good, not only have the ordinary maintenance expenses been met, but more than ordinary maintenance work has been done. In other words, the condition of the property has been improved, and frequently, even in addition to this, sums have been set aside out of earnings to make additions and betterments to the property. This enabled the company in months or years of depression to reduce maintenance expenses to a minimum. As will be seen, railroad corporations in general have in this respect done just what any prudent individual would do.

The average results for all railways of the United States show more than one-fourth of the gross expenditures assigned to the payment of interest on the mortgage debt and other "fixed

charges." The remaining three-quarters are absorbed in the payment of operating expenses and taxes, of which rather more than one-half are practically constant and do not fluctuate with the variations in business. Consequently, the only flexibility the railway corporation now has, to take care of the fluctuating conditions of business and income derived therefrom, attaches to less than half of its expenses of operation, or say to 35 per cent. of the gross expenses. For this reason the officers of railways view with considerable alarm a proposition to add largely to the fixed expenditures by making a fixed monthly charge for depreciation, based on a percentage of the original cost. Such a charge for equipment alone may readily amount to from 3 to 5 per cent. of the gross expenditure and correspondingly more when applied to all physical property.

From the foregoing it has been pretty clearly indicated that depreciation cannot be separated from maintenance; that if a property as a whole—and this is especially true of the rolling stock—is properly maintained, depreciation, except as to obsolescence, is certainly very slow and does not proceed, in respect to the entire property, below half its original value.

There is ample evidence that English railways have handled this question of "flexibility" in much the same way that American railways have, and that they have been upheld, not only by public opinion, but by the courts and the Board of Trade.

Conservatively managed manufacturing concerns recognize depreciation by writing off from year to year amounts sufficient in the aggregate to make it good; but these deductions are usually made from income. They are not a fixed charge, nor in any sense a fixed monthly operating expense; they are adjusted to the financial ability of the company. But here let it be remembered that when a manufacturing concern "writes off" part of its capital or reduces its inventory, it is usually considered justification for a higher rate of dividends on the remaining capital, a consideration which railroads have never been granted by public opinion in this country.

As is well understood, railroad profits from the transporting of passengers and freight increase with the volume of business

done. Thus, when business is at a low ebb, transportation companies suffer in two ways: Their receipts per passenger or per ton of freight do not increase, whereas their expenses do increase considerably. This rapidly reduces the margin of profit, and makes the actual setting-aside of fixed amounts for depreciation a very serious drain on resources. It is certainly to the interest of the community as a whole that railway corporations shall be conservatively managed and that their securities, so far as possible, shall be free from wide fluctuations. To include in operating expenses a charge for depreciation equally in bad times with good would mean reduced dividends in most cases, and bankruptcy in many.

It may be argued that in the operation of a coal or an iron mine or a lumber company, it is considered wise to charge off for a sinking fund or depreciation allowance an amount proportionate to the production. Of course, such a case is not at all analogous to that of a railway company. With a mine or a forest ownership, the assets are being steadily reduced unless replaced either with cash or with new property; but it should be noted that, even in such an operation, flexibility is obtained by making the charges proportionate to the output.

VI. SHOULD OPERATING EXPENSES INCLUDE CHARGES WHICH ARE IN REALITY FICTITIOUS?

It has always been the understanding of railway officials, and has been the accepted practice on the best-operated railroads, that operating expenses should show expenditures actually made. To put expenditures into operating expenses which have *not* been actually made, has been regarded as "padding" accounts. To make a charge for depreciation every month on a purely arbitrary basis, when the money which is thus charged is not actually spent in replacement, is obviously charging against operating expenses something for which no expenditure has been made. If it is advisable to make a charge for depreciation regardless of the fact that there is, in many cases, a counter-credit to balance against it, then that charge should be a charge against income

account, to be offset by appropriations from income account when money is taken from income for renewals or replacements.

A monthly charge for depreciation is tenable only on the theory that obsolescence of equipment and structures causes a shrinkage in the value of the physical assets of the company, which should be estimated and stated as nearly as possible for the benefit not only of the stockholders, but also of the public.

While it is admitted that the stockholders, the public, or the Interstate Commerce Commission *are entitled* to know the exact condition of the property and whether it is being properly maintained or not, it is equally important that operating expenses should show exactly the money actually expended on the property, with no fictitious items included. If a depreciation charge is proper, then it should be made as a deduction from income account. The stockholder will then know from year to year by consulting the income account whether the depreciation of his property has been fully met by appropriations from income, or by appreciation; for, surely, if a deduction from income account is to be made for depreciation, then some account should be taken of appreciation of the property. This is especially true if railway rates are to be based upon the value of property, although let it be always remembered that rates of transportation either by sea or land have never been based upon the value of the property of the carrier, or the cost of the service. Two railways, operating between the same points, one having a large capitalization and the other a small capitalization, cannot and do not charge different rates for their services; and it has been repeatedly shown that excessive capitalization, or over-capitalization, has not tended to make any corporation conservative in the manner of securing business, but on the contrary such corporations, having a heavy fixed charge to meet, are the most aggressive in their efforts to secure business, taken at a low profit.

VII. A SUMMARY OF ARGUMENTS AGAINST THE FIXED MONTHLY CHARGE FOR DEPRECIATION

A special committee of the American Railway Association undertook recently to ascertain the consensus of views of railroad

officials on this question of depreciation and its application in railway accounting; and as a result of that inquiry, issued a brief statement of the arguments presented against the method adopted by the Interstate Commerce Commission. As that summary has an important bearing on the subject it is submitted herewith.

1. To attempt to fix the rate of depreciation in percentages of original value is at best nothing more than "estimating" or "guessing;" it is not "accounting": (a) because no two roads are alike, (b) because no two years are alike (on account of difference in character of equipment owned, difference in character of service, and difference in volume of service).

2. At the hearing before the Interstate Commerce Commission, on May 22, 1908, the statistician of the commission said: "It is not alone the purpose of depreciation charges to protect the investor; the correct determination of *net operating revenue per month and per year* is equally important, and from the public point of view of relatively more importance."

If the theoretical accrual of liabilities for depreciation proves to be different from the facts (as it necessarily will be in every case) it will be necessary later to make adjustment debits and credits to expenses, and probably some very large ones, in order that "net operating revenue" may not be incorrectly stated. Even then the current statements "per month and per year" will inevitably be more or less out of joint.

3. If the refinements of accounting which are now sought are to be accomplished, the transportation companies will be compelled to add a force of bookkeepers to each workshop, and then the shop expense will include not only labor for repair and renewals of equipment, but this additional expense which would benefit neither the carrier, nor the public.

4. In establishing depreciation percentages, what allowance should be made from time to time for the use or non-use of equipment?

5. In the matter of obsolescence, who is competent to predict what types will be considered desirable or efficient ten, twenty, or thirty years from now, and therefore, what retirements will be expedient on different roads?

6. If the commission is now justified in establishing an arbitrary depreciation charge on equipment, it will logically be followed by depreciation charges on bridges, buildings, rails, ties, fences, telegraph line, block signals, and structures of all kinds. This means more estimating and more subsequent readjusting, and also more unnecessary expense.

7. Railway executives take the position that property accounts should be as sacred as income accounts. They concede that the commission is right in endeavoring to show all liabilities; but they contend that to anticipate liabilities by setting up reserves, while it may display a well-meant prudence, actually involves a misstatement of facts, and is, therefore, not good "accounting."

It is suggested, with a good deal of force, that it is the duty of the board of directors of each railway company to determine from time to time, according to the facts as they exist, when and to what extent charges should be made against income on account of depreciation which has actually occurred, and also to determine the proper means of providing for meeting these charges, either out of the company's surplus, or otherwise. Has the Act to Regulate Commerce taken from these boards of directors any of their authority in these respects, or relieved them of any of their responsibilities? In other words, has the commission a legal right to compel railways to make charges in order to create reserve accounts against liabilities which it is estimated will occur?

8. The theory upon which a monthly charge for depreciation is proper, is that it is a liability which has been incurred, and should, therefore, be stated; howbeit, it is admitted that this liability cannot be definitely determined and must be estimated in advance from experience tables. If it is the duty of railway officers to state all estimated liabilities, then by the same token many other estimated liabilities must be included in the accounts. For example, whenever there is a personal injury, or any accident of any kind, causing loss of life, or damage to property, an estimate of the probable cost of making settlements should be included; in the same way, an estimate of the cost of settling outstanding lawsuits should be included.

9. The idea of creating "reserve" or "suspense" accounts, to take care of estimated liabilities, is not a new one. It has been tried by steam railroads, as well as by many other corporations. For instance, the experiment has been tried of creating suspense accounts, against which rails, ties, ballast, car, and locomotive repairs and replacements, and other large items of maintenance or operation, were ultimately charged. But it is the consensus of opinion among the best accountants that such methods result in misleading, rather than truthful, returns. If, as it is assumed, correct accounting should show actual expenditures, actual outlays, actual liabilities as they are determined, then the method of charging for expenditures, which have not in reality been made, is not only objectionable, however well meant, but it causes a false return instead of a statement of actual facts.

10. This is a practical question, as well as a theoretical question, because financial problems with railroads are as practical as the movement of trains. It is not only wrong from an accounting standpoint, but as wrong morally to understate income as it is to overstate it. Again, at a time when the credit of railroads is at a low ebb, any diminution of net revenue reflected in their exhibits immediately becomes a very practical question on account of a consequent further lowering effect upon the company's credit and the consequent impairment of its ability as a semi-public servant.

11. It must not be understood that railway executive officers are opposed to making charges against operating expenses to make good losses due to

depreciation. While it is contended that with buildings, structures or equipment properly maintained, there is no depreciation except that due to obsolescence, still it is desirable to make good the losses due to obsolescence. The points upon which the views of railway officials differ from the views expressed by the statistician for the Interstate Commerce Commission, are simply these:

a) That depreciation due to obsolescence cannot be accurately determined in advance, and hence any liability resulting from such obsolescence may be "guessed at" but cannot be accurately gauged in advance;

b) The value of the assets of any company of every name and nature varies from time to time according to business conditions, and it is the duty of the board of directors, acting for the stockholders, to determine how any loss in the value of assets shall be made up;

c) In considering any shrinkage in the value of assets, full consideration must also be given to any appreciation in their value. There is usually some appreciation in the value of right of way, terminals, land, town lots, roadbed, and in the value of switch connections, business affiliations, etc.;

d) The practice which seems best justified by experience is to make good losses from depreciation of this kind of earnings in years of plenty, not only by the full restoration of the physical property by ample maintenance expenditures, but also by the replacement of obsolete structures or equipment with more modern or more efficient structures or equipment;

e) The executive officers of railroads assume that the Commission desires in the accounts a full, accurate and complete statement of facts for the benefit of public interest, as well as for the protection of investors.

A PRACTICAL SOLUTION

12. There has been no better argument on the whole subject than that contained in Comptroller Mahl's paper of October 7, 1907, from which the following paragraph is quoted:

"Appreciating, therefore, all the difficulties and cost which the keeping of the equipment accounts as contemplated by the commission will impose upon the railways without any practical compensation therefor, the writer expresses the hope that the commission will amend its rules by omitting altogether the provision for 'depreciation,' and amend the provisions for 'renewal' to represent the current cost of replacing all equipment vacated. This change will furnish the commission with reliable data about the depreciation which has been carried into the operating expenses of the railways and enable it to order adjustments suitable to each case if any such should be necessary."

FREDERIC A. DELANO

CHICAGO